CSCI 331

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Class Index

1.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

bplustreemk4	
indexB	. 8
kp	
sequenceB	. 12

2 Class Index

File Index

2.1 File List

Here is a list of all files with brief descriptions:

bplustreemk4.cpp	15
bplustreemk4.h	15
main.cpp	15

File Index

Class Documentation

3.1 bplustreemk4 Class Reference

```
#include <bplustreemk4.h>
```

Public Member Functions

- bplustreemk4 ()
- bplustreemk4 (string directory)
- void processFile ()
- void cleanUp ()

3.1.1 Constructor & Destructor Documentation

3.1.1.1 bplustreemk4() [1/2]

```
bplustreemk4::bplustreemk4 ( )

107
108
109 }
```

3.1.1.2 bplustreemk4() [2/2]

```
bplustreemk4::bplustreemk4 (
                string directory )
10
        //ofstream out;
11
        fstream myfile;
12
        this->dir = dir;
13
        string header;
14
        string headerout;
       myfile.open(dir, ios::in);
myfile >> this->headerSize;
15
16
        getline(myfile, header);
18
        cout << header << endl;</pre>
19
        this->header = header;
20
        int fieldcount = 0;
2.1
        int count = 0:
        //a "different" way to read data in because it wasnt working
23
        for (int i = 1; i < this->headerSize - 2; i++) {
            if (header.at(i) == '|')
25
                 cout << "encounter a field marker" << endl;</pre>
2.6
                 fieldcount++;
                 string temp;
for (int x = i - count; x < i; x++) {
27
28
29
                     temp.push_back(header.at(x));
30
31
                 if (fieldcount == 1) {
32
                     this->insertFlag = stoi(temp);
33
34
                 if (fieldcount == 2) {
35
                     this->totalNumRecords = stoi(temp);
37
                 if (fieldcount == 3) {
38
                     this->sizeofRecords = stoi(temp)-1;
39
                 if (fieldcount == 4) {
40
41
                     this->fieldsPerRecord = stoi(temp);
42
44
                     cout << "temp aka what ever we have deemed a field " << temp;</pre>
                     /*vector<string> temp2;
4.5
                     for (int y = 0; y < temp.size(); y++) {
46
47
48
49
                     vector<string> temp2;
50
                     string buffer;
                     stringstream ss(buffer);
for (int y = 0; y < temp.size(); y++) {</pre>
51
52
                          ss.clear();
53
                          ss.<< temp.at(y);
//cout << "Went into the string stream" << temp.at(y) << endl;</pre>
54
56
                          ss >> buffer;
                          if (buffer != "\"" || buffer != "(" || buffer != ")") {
57
58
59
                              temp2.push_back(buffer);
60
61
                     this->sizePerfield = temp2;
63
64
                 if (fieldcount == 6) {
                     vector<char> temp3;
65
                     for (int y = 0; y < temp.size(); y++) {
    if (temp.at(y) != '"'|| temp.at(y)!='(' || temp.at(y) != ')') {
66
68
                              temp3.push_back(temp.at(y));
69
70
71
                     this->labelPerfield = temp3;
72
73
                 if (fieldcount == 7) {
75
                     this->sortField = stoi(temp);
76
                 if (fieldcount == 8) {
77
                     this->description = temp;
78
80
                 count = 0;
81
                 i++;
82
8.3
84
            count++;
85
        myfile.close();
```

```
this->rbnRoot = this->header.size();
88
       //debugging
89
       cout << this->headerSize << endl;</pre>
       cout << this->totalNumRecords << endl;</pre>
90
       cout << this->description << endl;</pre>
91
92
       /*for (int i = 0 ; i < this->sizePerfield.size(); i++) {
93
94
           cout << this->sizePerfield.at(i);
95
96
97
       cout << endl:
       for (int i = 0; i < this->labelPerfield.size(); i++) {
98
           cout << this->labelPerfield.at(i);
99
100
101
        //out.open("btree.dat");
102
        //out << header;</pre>
        //out.close();
103
        cleanUp();
processFile();
104
105
106 }
```

3.1.2 Member Function Documentation

3.1.2.1 cleanUp()

```
void bplustreemk4::cleanUp ( )
 160
  161
                                                 vector<string> tempf;
                                                string temp;
for (int i = 0; i < this->sizePerfield.size(); i++) {
   if (this->sizePerfield.at(i) != "\"" && this->sizePerfield.at(i) != "(" && this->sizePerfield.at(i)) != "(" && this->sizePerfield.at(i)
  162
 163
164
                                             != ")") {
  165
                                                                                                   cout << this->sizePerfield.at(i);
  166
                                                                                                  tempf.push_back(this->sizePerfield.at(i));
  167
                                                                          }
  168
  169
                                                 this->sizePerfield = tempf;
                                                 cout << endl;
for (int i = 0; i < this->labelPerfield.size(); i++) {
   cout << this->labelPerfield.at(i);
  170
  171
 172
  173
174 }
```

3.1.2.2 processFile()

```
void bplustreemk4::processFile ( )
110
        ofstream outfile;
111
        fstream myfile;
112
113
        myfile.open(this->dir);
        outfile.open("btree.dat");
114
115
        outfile << this->header;
        sequenceB sb;
116
        indexB ib;
117
        //pair temp;
118
119
        int nextP=0;
120
        int preP=0;
        this->totalSequnceBlocks = 0;
121
122
        string tempLine;
123
        while (getline(myfile, tempLine)) {
124
           string zip;
            if (tempLine.size() != this->sizeofRecords) {
```

```
cout << "Line that was not big enough dected." << endl;</pre>
127
128
129
              else {
                   cout << "The line is of valid lenghth " << endl;</pre>
130
                   zip = templine.substr(0, 5);
cout << " The zip is " << zip << endl;
sb.nextPointer = this->headerSize + (this->blockSize * this->totalSequnceBlocks);
131
132
133
                   cout << "Next pointer is " << sb.nextPointer << endl;
cout << "pushing back this : " << tempLine << endl;</pre>
134
135
                   sb.seqeunce.push_back(tempLine);
136
                   cout << " SEQUENCE SIZE BEFORE ADDING " << sb.seqeunce.size() << endl;</pre>
137
                   ib.seqeunce.push_back(kp(zip, (this->headerSize + this->totalSequnceBlocks * 249)));
138
139
                   if (sb.seqeunce.size() == 3) {
                        this->totalSequnceBlocks++;
140
                        //cout << "this is what is in the sequence block " << sb.writeToFile() << endl;
outfile << sb.writeToFile();</pre>
141
142
                        sb.seqeunce.clear();
143
144
                        continue;
146
                   if (ib.seqeunce.size() == this->indexBlockSize-1 ) {
147
                         this->totalIndexBlock++;
                        cout << "this is what is in the Index block " << ib.writeToFile() << endl;
outfile << ib.writeToFile();</pre>
148
149
150
                        ib.seqeunce.clear();
                        continue;
151
152
153
                    //cout << "The sequence size after adding " << sb.seqeunce.size() << endl;</pre>
154
155
156
         outfile.close();
157
         myfile.close();
158
         cout << this->sizeofRecords << endl;</pre>
159 }
```

The documentation for this class was generated from the following files:

- · bplustreemk4.h
- bplustreemk4.cpp

3.2 indexB Struct Reference

#include <bplustreemk4.h>

Public Member Functions

- indexB ()
- indexB (int prev, kp item)
- void setNext (int next)
- string writeToFile ()

Public Attributes

- · int nextPointer
- int prevPointer
- vector< kp > sequence

3.2.1 Constructor & Destructor Documentation

3.2.2 Member Function Documentation

3.2.2.1 setNext()

3.2.2.2 writeToFile()

3.2.3 Member Data Documentation

3.2.3.1 nextPointer

int indexB::nextPointer

3.2.3.2 prevPointer

int indexB::prevPointer

3.2.3.3 seqeunce

```
vector<kp> indexB::seqeunce
```

The documentation for this struct was generated from the following file:

• bplustreemk4.h

3.3 kp Struct Reference

```
#include <bplustreemk4.h>
```

Public Member Functions

- kp (string nkey, int value)
- void setValue (int nValue)
- int getValue ()

Public Attributes

- string key
- int value

3.3.1 Constructor & Destructor Documentation

3.3.1.1 kp()

3.3.2 Member Function Documentation

3.3.2.1 getValue()

3.3.2.2 setValue()

3.3.3 Member Data Documentation

3.3.3.1 key

string kp::key

3.3.3.2 value

```
int kp::value
```

The documentation for this struct was generated from the following file:

• bplustreemk4.h

3.4 sequenceB Struct Reference

```
#include <bplustreemk4.h>
```

Public Member Functions

- sequenceB ()
- sequenceB (int prev, string item)
- void setNext (int next)
- string writeToFile ()

Public Attributes

- · int nextPointer
- · int prevPointer
- vector< string > seqeunce

3.4.1 Constructor & Destructor Documentation

3.4.1.2 sequenceB() [2/2]

3.4.2 Member Function Documentation

3.4.2.1 setNext()

3.4.2.2 writeToFile()

```
string sequenceB::writeToFile ( ) [inline]
37
 38
                                                    string temp;
                                                    stringstream ss(temp);
 39
                                                    temp.push_back('s');
//temp.push_back('|');
                                                    42
 43
 44
 45
 46
                                                                                          temp.push_back(seqeunce.at(i).at(x));
 47
                                                                       //ss << seqeunce.at(i);
//cout << "What is going into the sequence " << seqeunce.at(i) << endl;
//ss >> temp;
 48
 49
50
 51
                                                     //cout << "THE LAST ITEM IN THE SEQUENCE " << sequence.at(2)<<endl;
//cout << "THE SIZE OF THE SEQUENCE BLOCK " << sequence.size() << endl;
 52
 53
                                                      temp.push_back('|');
 54
                                                      temp.push_back(nextPointer);
 55
                                                    temp.pusn_back('|');
temp.push_back('|');
temp.push_back('');
te
 56
 57
 59
                                                      //}
 60
 61
                                                      return temp;
 62
                                  }
```

3.4.3 Member Data Documentation

3.4.3.1 nextPointer

int sequenceB::nextPointer

3.4.3.2 prevPointer

int sequenceB::prevPointer

3.4.3.3 seqeunce

vector<string> sequenceB::seqeunce

The documentation for this struct was generated from the following file:

• bplustreemk4.h

File Documentation

4.1 bplustreemk4.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <sstream>
#include <vector>
#include "bplustreemk4.h"
```

4.2 bplustreemk4.h File Reference

```
#include <string>
#include <sstream>
#include <vector>
```

Classes

- struct kp
- struct sequenceB
- struct indexB
- class bplustreemk4

4.3 main.cpp File Reference

```
#include <string>
#include <iostream>
#include <sstream>
#include <fstream>
#include "bplustreemk4.h"
```

16 File Documentation

Functions

• int main ()

Variables

• string dir = "C:\\Users\\reali\\Desktop\\CSCI\\us_postal_codesn+.txt"

4.3.1 Function Documentation

4.3.1.1 main()

```
int main ( )

9      {
10       /*Due to the lack of time this is implemented staticly*/
11      bplustreemk4 test = bplustreemk4(dir);
12      return 0;
13 }
```

4.3.2 Variable Documentation

4.3.2.1 dir

string dir = "C:\\Users\\reali\\Desktop\\CSCI\\us_postal_codesn+.txt"

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